

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-016771**Date Inspected:** 10-Sep-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1100**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** John Pagliero**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Section**Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above.

This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and to monitor American Bridge/Fluor (ABF) welding operations.

The following observations were made:

- 1) At weld joints E6/E7 – D1 and D2, inside the OBG section: ABF welding personnel James Zhen (#6001) was performing Submerged Arc Welding (SAW). QC Inspector Tony Sherwood was present.
- 2) At weld joints E5/E6 - LS-4, 5 and 6: ABF welding personnel Xiao Jian Wan (#9677) was performing Shielded Metal Arc Welding (SMAW) on LS-5. QC Inspector John Pagliero was present.
- 3) At weld joints E4/E5 - LS-1, 2 and 3: ABF welding personnel Hua Qiang Hwang (#2930) was performing grinding to clean up LS-1 and 2 for final QC visual inspection. QC Inspector John Pagliero was present.
- 4) At weld joints E4/E5 - LS-4, 5 and 6: This QA Inspector observed welding appeared to be completed but in the as welded and/or needed additional grinding condition. The bottom of LS-5 will require transitioning due to the abrupt change in height between the longitudinal stiffeners. ABF personnel have not been working at this location for several days. These observations were pointed out to QC Inspector John Pagliero.
- 5) At E1-PP-9.5-E3 #2 (Round Deck Penetration), inside the OBG section: ABF welding personnel Jin Pei Wang

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(#7299) was performing grinding and SMAW to repair various areas marked by QC during the initial visual inspection of the welding. QC Inspector John Pagliero was present.

6) At E1-PP-8.5-E3 #3 (Round Deck Penetration), inside the OBG section: QC John Pagliero performed a visual inspection of the back gouged area and marked several locations for additional grinding.

At weld joints E6/E7 – D1 and D2, inside the OBG section this QA Inspector observed ABF welding personnel James Zhen (#6001) performing Submerged Arc Welding (SAW) using the track system. This QA Inspector also observed QC Inspector Tony Sherwood verify the following SAW welding parameters: 560 amperes and 32.2 volts at a travel speed of 380 mm per minute with a heat input of 2.8 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-4040B-1.

At weld joints E5/E6 - LS-4, 5 and 6 this QA Inspector observed ABF welding personnel Xiao Jian Wan (#9677) was performing Shielded Metal Arc Welding (SMAW) on LS-5. This QA Inspector observed QC Inspector John Pagliero verify the following welding parameters: 130 amperes using a 3.2 mm diameter E9018H4R electrode. Prior to the start of welding this QA Inspector observed QC Inspector John Pagliero verify the temperature of the base metal was greater than 100°C. The welding observed appeared to comply with ABF-WPS-D15-1012-3. At weld joints E4/E5 - LS-1, 2 and 3 this QA Inspector observed ABF welding personnel Hua Qiang Hwang (#2930) was performing grinding on LS-1 and 2 in preparation for QC inspections. This QA Inspector did not observe welding at this location this date. QC Inspector John Pagliero was present.

At weld joints E4/E5 - LS-4, 5 and 6 this QA Inspector observed welding appeared to be completed but in the as welded and/or needed additional grinding condition. The bottom of LS-5 appeared to have a steep difference in height between the bottoms of the stiffeners at LS-5 and would require transitioning due to the abrupt change. ABF personnel have not been working at this location for several days. These observations were pointed out to QC Inspector John Pagliero.

At E1-PP-9.5-E3 #2 (Round Deck Penetration), inside the OBG section this QA Inspector observed ABF welding personnel Jin Pei Wang (#7299) was performing grinding. ABF welding personnel Jin Pei Wang (#7299) indicated to QC Inspector John Pagliero the weld was ready for the initial visual inspection of the final weld. This QA Inspector was present and was informed by QC Inspector John Pagliero he had mark various locations of porosity clusters, under fill, trapped slag and lack of fusion. This QA Inspector climbed the ladder for access and performed a random visual verification and observed the work performed and concurred with the findings of QC Inspector John Pagliero. This QA Inspector observed additional grinding and SMAW to repair the various areas marked by QC. This QA Inspector randomly observed QC Inspector John Pagliero verify the following welding parameters prior to the start of welding: 125 amperes using a 3.2 mm diameter E7018 electrode. The welding observed appeared to comply with ABF-WPS-D15-1040B Rev-1.

At E1-PP-8.5-E3 #3 (Round Deck Penetration), inside the OBG section this QA Inspector observed QC John Pagliero performed and mark several locations for additional grinding on the back gouged area of the weld. Later in the shift this QA Inspector observed QC Inspector John Pagliero perform and accept the visual inspection for the back gouged section of the weld joint. This QA Inspector climbed the ladder for access and performed a random visual verification and observed the work appeared to comply with the contract requirements. This QA Inspector randomly observed QC Inspector Tony Sherwood perform and accept the Magnetic Particle Testing

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(MT) on the back gouged section of the weld.

### Summary of Conversations:

As noted above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Hager,Craig
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Quality Assurance Inspector
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<b>Reviewed By:</b>	Levell,Bill
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QA Reviewer
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